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Student Tracking System

VB.NET Source Code

Learning Aim A – Code Analysis

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```vb
Imports System.IO

Module SampleProgram
    'the file locations
    Public Const STUDENT_FILE As String = "StudentData.txt"
    Public Const ERROR_LOG_FILE As String = "ErrorLog.txt"
    'used to get the New ID to save
    Dim newStudentID As Integer = 0

    'the array of students
    Dim classOfstudents() As Student

    'the 1st row of data from the file
    Dim headerRow() As String
    'a set of values to tell where the homework starts and finishes in the file
    'used because we are dynamically adding homework
    'it would have been much better to use XML
    Dim numberOfSetHW As Integer = 0
    Dim numberOfNotHWItems As Integer = 7
    Dim hwRangeStart As Integer = 3
    Dim hwRangeEnd As Integer = 5

    'a set of constants for the grade boundaries
    Dim minGradeAThreshold As Double = 80
    Dim minGradeBThreshold As Double = 60
    Dim minGradeCThreshold As Double = 50
    Dim minGradeDThreshold As Double = 38
    Dim minGradeEThreshold As Double = 25

    ''' <summary>
    ''' structure for the student
    ''' </summary>
    Structure Student
        Dim ID As Integer
        Dim fName As String
        Dim sName As String
        Dim marks() As Integer 'the difficult bit - the array of marks.
        Dim avgMark As Double
        Dim grade As String
        Dim target As String
        Dim Status As String
    End Structure
```

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```
''' <summary>
    ''' the main entry point for the program
    ''' this just calls RunProgram
    ''' </summary>
    ''' <param name="args"></param>
    Sub Main(ByVal args As String())

        Do While True
            RunProgram()
        Loop

    End Sub

    Sub RunProgram()
        LoadStudentData()
        'DisplayFullClassList()
        DisplayMainMenu()
        Console.ReadLine()
    End Sub
```

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```
''' <summary>
    ''' function that loads the student data from a file.
    ''' creates the list of students in a class
    ''' this list is available to the whole program.
    ''' </summary>
    Public Sub LoadStudentData()
        'create the holding array as normal
        Dim numberOfStudentsInFile As Integer = GetNumberOfStudents()
        Dim tempData As String() = New String(numberOfStudentsInFile - 1) {}

        'create a streamreader object
        If File.Exists(STUDENT_FILE) Then
            'the file exists, so load it.
            Dim sr As StreamReader = New StreamReader(STUDENT_FILE)

            'make sure this is in a try catch block.
            Try
                Dim counter As Integer = 0

                'keep doing this while we are NOT at the end of the file.
                While Not sr.EndOfStream
                    'read one line of data into the array
                    tempData(counter) = sr.ReadLine()

                    'increment the counter
                    counter += 1
                End While
            Catch ex As Exception
                Console.WriteLine("An error occurred in loading the student data")
                'and shut down streamreader
                LogError(ex, "An error occurred in loading the student data")
            Finally
                sr.Close()
            End Try
        Else
            LogError("The student file could not be found")
            Throw New Exception("The student File could not be found")
        End If

        'once the file has been loaded, build the data list
        BuildClassData(tempData)
    End Sub
```

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